

WHAT IS CLAIMED IS:

1. A data transmission system having a transmitting apparatus that transmits a scene description which describes the structures of one or more signals to be used to construct a scene, and a receiving apparatus that constructs the scene according to the scene description, wherein:

said transmitting apparatus has a scene description processing means that transfers a scene description which conforms to the state of a transmission line and/or a request issued from said receiving apparatus.

2. A data transmission system according to Claim 1, further comprising a memory means in which a plurality of predefined scene descriptions is stored, wherein:

said scene description processing means selects a scene description from among the plurality of scene descriptions stored in said memory means, and transfers the selected scene description.

3. A data transmission system according to Claim 1, further comprising a memory means in which a plurality of predefined scene descriptions is stored, wherein:

said scene description processing means converts a predefined scene description read from said memory means

into another scene description, and transfers the resultant scene description.

4. A data transmission system according to Claim 1, wherein said scene description processing means encodes a scene description and transfers the resultant scene description.

5. A data transmission system according to Claim 1, wherein:

said transmitting apparatus includes a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request issued from said receiving apparatus, as one or more signals to be used to construct a scene; and

said scene description processing means transfers a scene description that conforms to a transmission rate for a signal transferred from said signal processing means and/or quality.

6. A data transmission system according to Claim 1, wherein:

said transmitting apparatus includes a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request

issued from said receiving apparatus, as one or more signals to be used to construct a scene; and

said scene description processing means transfers a scene description that includes information necessary for said receiving apparatus to decode the signals transferred from said signal processing means.

7. A data transmission system according to Claim 1, wherein:

said transmitting apparatus includes a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request issued from said receiving apparatus, as one or more signals to be used to construct a scene; and

said scene description processing means transfers a scene description that specifies whether the signals to be used to construct a scene are used or not.

8. A data transmission system according to Claim 1, wherein said scene description processing means transfers a scene description whose complexity conforms to the state of a transmission line and/or a request issued from said receiving apparatus.

9. A data transmission system according to Claim 8,

wherein said scene description processing means transfers a scene description, with which a first part scene within a scene is replaced with a second part scene whose complexity is different from the complexity of the first part scene, in conformity with the state of a transmission line and/or a request issued from said receiving apparatus.

10. A data transmission system according to Claim 8, wherein said scene description processing means transfers a scene description, with which a part scene within a scene is removed or a new part scene is added to the scene, in conformity with the state of a transmission line and/or a request issued from said receiving apparatus.

11. A data transmission system according to Claim 8, wherein said scene description processing means modifies a quantization step, at which a scene description is encoded, in conformity with the state of a transmission line and/or a request issued from said receiving apparatus.

12. A data transmission system according to Claim 1, wherein said scene description processing means divides a scene description into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from said receiving apparatus, and then

transfers the resultant scene description.

13. A data transmission system according to Claim 12, wherein said scene description processing means adjusts a time interval between time instants at which said receiving apparatus decodes each of the plurality of decoding units into which a scene description is divided.

14. A data transmitting method for transmitting a scene description that describes the structures of one or more signals to be used to construct a scene, and constructing the scene according to the scene description, wherein:

a scene description that conforms to the state of a transmission line and/or a request issued from a receiving side is transmitted.

15. A data transmitting method according to Claim 14, wherein:

a plurality of predefined scene descriptions is stored; and

a scene description is selected from among the plurality of stored scene descriptions, and then transmitted.

16. A data transmission system according to Claim 14,

wherein:

predefined scene descriptions are stored; and
any of the predefined scene descriptions that are
stored is read, converted into another scene description,
and then transmitted.

17. A data transmission system according to Claim 14,
wherein a scene description is encoded and transmitted.

18. A data transmission system according to Claim 14,
wherein:

one or more signals that conform to the state of a
transmission line and/or a request issued from a receiving
side are transmitted as one or more signals to be used to
construct a scene; and

a scene description that conforms to a transmission
rate at which the signals are transmitted in compliance with
the state of a transmission line and/or a request issued
from a receiving side, and/or quality is transmitted.

19. A data transmitting method according to Claim 14,
wherein:

one or more signals that conform to the state of a
transmission line and/or a request issued from a receiving
side are transmitted as one or more signals to be used to

construct a scene; and

a scene description that includes information necessary for a receiving side to restore the signals transmitted in conformity with the state of the transmission line and/or the request issued from the receiving side is transmitted.

20. A data transmission system according to Claim 14, wherein:

one or more signals that conform to the state of a transmission line and/or a request issued from a receiving side are transmitted as one or more signals to be used to construct a scene; and

a scene description that specifies whether the signals to be used to construct a scene are used or not is transmitted.

21. A data transmission system according to Claim 14, wherein a scene description whose complexity conforms to the state of a transmission line and/or a request issued from a receiving side is transmitted.

22. A data transmission system according to Claim 21, wherein a scene description with which a first part scene within a scene is replaced with a second part scene whose complexity is different from the complexity of the first

part scene is transmitted in conformity with the state of a transmission line and/or a request issued from a receiving side.

23. A data transmitting method according to Claim 21, wherein, a scene description with which a part scene within a scene is removed or a new part scene is added to the scene is transmitted in conformity with the state of a transmission line and/or a request issued from a receiving side.

24. A data transmitting method according to Claim 21, wherein a quantization step at which a scene description is encoded is modified in conformity with the state of a transmission line and/or a request issued from a receiving side.

25. A data transmitting method according to Claim 14, wherein a scene description is divided into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from a receiving side, and then transmitted.

26. A data transmitting method according to Claim 25, wherein a time interval between time instants at which a

receiving side decodes each of the plurality of decoding units into which a scene description is divided is adjusted.

27. A data transmitting apparatus for transmitting a scene description that describes the structures of one or more signals to be used to construct a scene, comprising:

a scene description processing means for transferring a scene description that conforms to the state of a transmission line and/or a request issued from a receiving side.

28. A data transmitting apparatus according to Claim 27, further comprising:

a memory means in which a plurality of predefined scene descriptions is stored, wherein:

said scene description processing means selects a scene description from among the plurality of scene descriptions stored in said memory means, and transmits the selected scene description.

29. A data transmitting apparatus according to Claim 27, further comprising:

a memory means in which predefined scene descriptions are stored, wherein:

said scene description processing means converts a

predefined scene description read from said memory means into another scene description, and transfers the resultant scene description.

30. A data transmitting apparatus according to Claim 27, wherein said scene description processing means encodes a scene description and transmits the resultant scene description.

31. A data transmitting apparatus according to Claim 27, further comprising a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request issued from a receiving side, as one or more signals to be used to construct a scene, wherein:

said scene description processing means transfers a scene description that conforms to a transmission rate for the signals transferred from said signal processing means and/or quality.

32. A data transmitting apparatus according to Claim 27, further comprising a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request issued from a receiving side, as one or more signals to be used to construct a scene,

wherein:

said scene description processing means transfers a scene description that includes information necessary for a receiving side to decode the signals transferred from said signal processing means.

33. A data transmitting apparatus according to Claim 27, further comprising a signal processing means that transfers one or more signals, which conform to the state of a transmission line and/or a request issued from a receiving side, as one or more signals to be used to construct a scene, wherein:

said scene description processing means transfers a scene description that specifies whether the signals to be used to construct a scene are used or not.

34. A data transmitting apparatus according to Claim 27, wherein said scene description processing means transfers a scene description whose complexity conforms to the state of a transmission line and/or a request issued from a receiving side.

35. A data transmitting apparatus according to Claim 34, wherein said scene description processing means transfers a scene description, with which a first part scene

within a scene is replaced with a second part scene whose complexity is different from the complexity of the first part scene, in conformity with the state of a transmission line and/or a request issued from a receiving side.

36. A data transmitting apparatus according to Claim 34, wherein said scene description processing means transfers a scene description, with which a part scene within a scene is removed or a new part scene is added to the scene, in conformity with the state of a transmission line and/or a request issued from a receiving side.

37. A data transmitting apparatus according to Claim 34, wherein said scene description processing means modifies a quantization step, at which a scene description is encoded, in conformity with the state of a transmission line and/or a request issued from a receiving side.

38. A data transmitting apparatus according to Claim 27, wherein said scene description processing means divides a scene description into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from a receiving side.

39. A data transmitting apparatus according to Claim

38, wherein said scene description processing means adjusts a time interval between time instants at which a receiving side decodes each of the plurality of decoding units into which a scene description is divided.

40. A data transmitting method for transmitting a scene description that describes the structures of one or more signals to be used to construct a scene, wherein:

a scene description that conforms to the state of a transmission line and/or a request issued from a receiving side is transmitted.

41. A data transmitting method according to Claim 40, wherein a plurality of predefined scene descriptions is stored, and a scene description selected from among the plurality of scene descriptions that are stored is transmitted.

42. A data transmitting method according to Claim 40, wherein predefined scene descriptions are stored, and a predefined scene description that is stored is read, converted into another scene description, and then transmitted.

43. A data transmitting method according to Claim 40,

wherein a scene description is encoded and transmitted.

44. A data transmitting method according to Claim 40, wherein: one or more signals that conform to the state of a transmission line and/or a request issued from a receiving side are transmitted as one or more signals to be used to construct a scene; and

a scene description that conforms to a transmission rate at which the signals are transmitted in conformity with the state of a transmission line and/or a request issued from a receiving side, and/or quality is transmitted.

45. A data transmitting method according to Claim 40, wherein: one or more signals that conform to the state of a transmission line and/or a request issued from a receiving side are transmitted as one or more signals to be used to construct a scene; and

a scene description that includes information necessary for a receiving side to decode the signals transmitted in conformity with the state of a transmission line and/or a request issued from the receiving side.

46. A data transmitting method according to Claim 40, wherein: one or more signals that conform to the state of a transmission line and/or a request issued from a receiving

side are transmitted as one or more signals to be used to construct a scene; and

a scene description that specifies whether the signals to be used to construct a scene are used or not is transmitted.

47. A data transmitting method according to Claim 40, wherein a scene description whose complexity conforms to the state of a transmission line and/or a request issued from a receiving side is transmitted.

48. A data transmitting method according to Claim 47, wherein a scene description, with which a first part scene within a scene is replaced with a second part scene whose complexity is different from the complexity of the first part scene, is transmitted in conformity with the state of a transmission line and/or a request issued from a receiving side.

49. A data transmitting method according to Claim 47, wherein a scene description, with which a part scene within a scene is removed or a new part scene is added to the scene, is transferred in conformity with the state of a transmission line and/or a request issued from a receiving side.

50. A data transmitting method according to Claim 47, wherein a quantization step at which a scene description is encoded is modified in conformity with the state of a transmission line and/or a request issued from a receiving side.

51. A data transmitting method according to Claim 40, wherein a scene description is divided into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from a receiving side.

52. A data transmitting method according to Claim 51, wherein a time interval between time instants at which a receiving side decodes each of the plurality of decoding units into which a scene description is divided is adjusted.

53. A scene description processing unit for processing a scene description that describes the structures of one or more signals to be used to construct a scene, wherein:

when a scene description must be transmitted over a transmission line, a scene description that conforms to the state of the transmission line and/or a request issued from a receiving side is transferred.

54. A scene description processing unit according to Claim 53, wherein a scene description is selected from among a plurality of predefined scene descriptions, and then transferred.

55. A scene description processing unit according to Claim 53, wherein a predefined scene description is converted into another scene description, and then transferred.

57. A scene description processing unit according to Claim 53, wherein a scene description that conforms to a transmission rate, at which the signals are transmitted in conformity with the state of a transmission line and/or a request issued from a receiving side as one or more signals to be used to construct a scene, and/or quality is transferred.

58. A scene description processing unit according to Claim 53, wherein a scene description that includes information necessary for a receiving side to decode the signals, which are transferred in conformity with the state of a transmission line and/or a request issued from the receiving side as one or more signals to be used to

construct a scene, is transferred.

59. A scene description processing unit according to Claim 53, wherein a scene description that specifies whether the signals that are transferred in conformity with the state of a transmission line and/or a request issued from a receiving side as one or more signals to be used to construct a scene are used or not is transferred.

60. A scene description processing unit according to Claim 53, wherein a scene description whose complexity conforms to the state of a transmission line and/or a request issued from a receiving side is transferred.

61. A scene description processing unit according to Claim 60, wherein a scene description with which a first part scene within a scene is replaced with a second part scene whose complexity is different from the complexity of the first part scene is transferred in conformity with the state of a transmission line and/or a request issued from a receiving side.

62. A scene description processing unit according to Claim 60, wherein a scene description with which a part scene within a scene is removed or a new part scene is added

to the scene is transferred in conformity with the state of a transmission line and/or a request issued from a receiving side.

63. A scene description processing unit according to Claim 60, wherein a quantization step at which a scene description is encoded is modified in conformity with the state of a transmission line and/or a request issued from a receiving side.

64. A scene description processing unit according to Claim 53, wherein a scene description is divided into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from a receiving side, and then transferred.

65. A scene description processing unit according to Claim 64, wherein a time interval between time instants at which a receiving side decodes each of the plurality of decoding units into which a scene description is divided is adjusted.

66. A scene description processing method for processing a scene description that describes the structures of one or more signals to be used to construct a scene,

wherein:

when a scene description must be transmitted over a transmission line, a scene description that conforms to the state of the transmission line and/or a request issued from a receiving side is transferred.

67. A scene description processing method according to Claim 66, wherein a scene description is selected from among a plurality of predefined scene descriptions, and then transferred.

68. A scene description processing method according to Claim 66, wherein a predefined scene description is converted into another scene description, and then transferred.

69. A scene description processing method according to Claim 66, wherein a scene description is encoded and then transferred.

70. A scene description processing method according to Claim 66, wherein a scene description that conforms to a transmission rate, at which the signals are transmitted in conformity with the state of a transmission line and/or a request issued from a receiving signal as one or more

signals to be used to construct a scene, and/or quality is transferred.

71. A scene description processing method according to Claim 66, wherein a scene description that includes information necessary for a receiving signal to decode the signals that are transferred in conformity with the state of a transmission line and/or a request issued from the receiving signal as one or more signals to be used to construct a scene is transferred.

72. A scene description processing method according to Claim 66, wherein a scene description that specifies whether the signals which are transferred in conformity with the state of a transmission line and/or a request issued from a receiving signal as one or more signals to be used to construct a scene are used or not is transferred.

73. A scene description processing method according to Claim 66, wherein a scene description whose complexity conforms to the state of a transmission line and/or a request issued from a receiving side is transferred.

74. A scene description processing method according to Claim 73, wherein a scene description with which a first

part scene within a scene is replaced with a second part scene whose complexity is different from the complexity of the first part scene is transferred in conformity with the state of a transmission line and/or a request issued from a receiving side.

75. A scene description processing method according to Claim 73, wherein a scene description with which a part scene within a scene is removed or a new part scene is added to the scene is transferred in conformity with the state of a transmission line and/or a request issued from a receiving side.

76. A scene description processing method according to Claim 73, wherein a quantization step at which a scene description is encoded is modified in conformity with the state of a transmission line and/or a request issued from a receiving side.

77. A scene description processing method according to Claim 66, wherein a scene description is divided into a plurality of decoding units in conformity with the state of a transmission line and/or a request issued from a receiving side.

